5

## ABSTRACT OF THE DISCLOSURE

A method of depositing an optical quality silica film on a substrate is described wherein the film is formed on the substrate by plasma enhanced chemical vapor deposition (PECVD) in the presence of reactive gases while controlling the total pressure of the gases. The as-deposited film is then subjected to a low temperature treatment between  $400^\circ$  to  $1200^\circ\text{C}$  to minimize the presence of contaminant compounds in the film.